Cultural Heritage

Cultural Heritage conservation is extremely important and has been broadly emphasized by UNESCO. Yet not much attention is paid especially in developing countries, where monuments of great value exist, due to other priorities: poverty reduction, infrastructure improvement. This approach has negative impact on Cultural Heritage.

Major importance for Greece with such a big number of monuments and sites of a variety of historical periods.

Need for Geometric Recording of Monuments

In this field, Surveyors have a leading role to play!!

Geometric Recording of Monuments

The geometric recording of a monument is the procedure of acquiring, processing, archiving and presenting data for the determination of the position and the actual present form, shape and size of a monument in 3D space at a given moment in time.

The geometric recording monitors the present condition of the monuments, as it has been formed through time and it is a necessary document for those would understand their past, as well as for those who provide for their future.

Geometric Recording of Cultural Heritage

Necessity for Recording – Documentation (Venice Chart, 1964)

International Rules

Geometric Recording as part of the integrated Monument Documentation

Conservation, Development and Restitution of Architectural Heritage demands Multidisciplinary Approach

Basic Principles of Geometric Recording

Structural Interventions on the monument according to International Rules

Application of non contact methods and techniques

Recoverability of interventions

Use of low cost methods and techniques appropriate for the Technical Specifications

Documentation of monument – Field data collection

Specialized needs according to the importance & shape of the monument and of the intervention that will be done.

Accuracy, Type & format of products

Geometric Recording of Monuments

Scale – Accuracy

Methods of Geometric Recording:

- Topometric
- Geodetic
- Photogrammetric
- Laser Scanning
**Geometric Recording of Monuments**

The geodetic and photogrammetric methods:

- Are based on direct measurements of lengths and angles either on the object itself or on images of it.
- Determine 3D co-ordinates in a common reference system.
- Ensure the specified and common accuracy.
- Provide adaptability and flexibility, together with speed, security and efficiency.
- Are cost effective, in the sense that they are the only ones capable of satisfying and meeting any specifications with the least possible cost and maximum possible benefit.

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**Digital Rectification**

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**Photomosaic**

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**Orthophotography**

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Capacity

Capacity can be defined as the ability of individuals and organizational units to perform functions effectively, efficiently, and sustainably.

- Capacity is not a passive state but is part of a continuing process.
- Human resources are central to Capacity development.
- The overall context within which organizations undertake their functions will be a key consideration in strategies for Capacity Development.

UN publication on Capacity Assessment and Development.
Capacity Development

Capacity Development is the process by which individuals, groups, organisations, institutions, societies increase their abilities to:

- Perform core functions, solve problems, define and achieve objectives
- Understand and deal with their development needs in a sustainable manner

Capacity Development includes retaining & strengthening existing capacities of people & organisations to perform their tasks.

Capacity Building

Capacity Building encompasses the country’s human, scientific, technological, organisational, institutional and resource capabilities.

It includes the ways and means by which the overall goals are achieved:
- Education & Training
- Human resource development
- Development of institutional infrastructures
- Adequate policy framework

Capacity Building in Cultural Heritage

Adjustment of the various aspects of Capacity Building in the field of Geometric Recording of Cultural Heritage:

- Education and Training of Surveyors and the other relevant disciplines
- Gaining experience - knowhow
- Development of infrastructure
- Use of specialized hardware & software by the Public & mainly the Private Sector

Capacity Building should be improved at all fields:

- **Political level / Decision Makers**
  - Awareness about the necessity for multi-disciplinary approach
  - Adopting the necessary legislation
  - Financing the compilation of studies
- **Administrative level**
  - Institutional arrangements & Collaboration of Public Services
  - Development of a system for the supervising projects, quality control tests & compilation of the works
- **Scientific level**
  - Increase of specialized technical knowledge
  - Lifelong learning programs & Continuing education
  - Experience through active participation in multi-disciplinary working groups
- **Financial level**
  - Compilation of cost-benefit & technical studies for the geometric recording, using both purely financial and cultural criteria
  - Purchase & Maintenance of Hardware & Software
Capacity Building in Cultural Heritage  3/3

- End-user level
  Raising awareness about: What they can demand?
  What they can expect?
  What are the procedures & techniques for Recording
  Which are the levels of Documentation & Archiving

- Citizen level
  Developing public awareness about Cultural Heritage
  Historic knowledge – Aesthetic upgrading

Education in Greece for the Recording of Cultural Heritage

Present situation in the Schools of Surveyors & Architects
  (NTU Athens)

Under-graduate studies  5 years
  Surveyors: - Large number of courses in Geodesy,
  Photogrammetry, Laser Scanning
  - 1 specialized course at the final academic year
  - Optional Diploma thesis (1 full academic year)
  Architects: 1 course

Post-graduate Programme  1.5 year
  “Monument Protection”

Decisions about Advanced Education in EU

June 1999 (Bologna):
  Symposium on “Advanced Education in Europe”
  participation of 29 European Ministers of Education
  Statement (among others):
    Two-segment studies: 3 years for the 1st degree
    + 2 years for a Master degree

September 2003 (Berlin):
  Ministerial Decision of 33 Ministers of Education
  Commitment for validation by the end of 2005

Changes in Advanced Education in EU

Decisions taken will:
  - affect the Structure & Orientation of studies
  - result in more specialization after the completion
    of the 2nd segment of studies, and to lack of fundamental
    knowledge to the graduates of the 1st segment

Universities & New European Challenges

- Increased demand for higher education
- The internationalisation of education & research
- To develop effective & close cooperation with industry
- The proliferation of places where knowledge is produced
- The re-organisation of knowledge
- The emergence of new expectations

Lifelong Learning  1/3

In addition to the change and the new challenges in University education, new trends for the Life Long
Learning in EU are established.

In June 2000 Feira (Portugal) European Council asked the EU Commission and the Member States to identify a
coherent strategy to enable all Europeans to access LL
  - LL focuses on apprenticeship from pre-school
education to the approach to retirement
  - Covers all forms of education (formal / informal)
Lifelong Learning 2/3

Present situation in Greece, in the field of Recording:
Sporadic programmes in Continuing Education are offered by the 2 Universities (NTUA, AUTH), the TGC, and the Private Sector (at a level lower than the University degree)

Future situation:
- A new semi-independent agency will be established within each University responsible for the LL self-financed
- Educational Institutes for LL in each Prefecture

Guidelines & Action Plan Framework

All the above mentioned show the need for “Guidelines on Specialized Education and Study Compilation for the Documentation of Cultural Heritage”.

In the international literature only general Rules and Specifications exist, and some more are under compilation, such as from the International Scientific Committee for Analysis and Restoration of Structure of the Architectural Heritage.

Producing Guidelines is not an easy task, due to the broad variety and the different type of monuments. Each monument needs a special approach and different level of treatment.